

IMPACT OF TOP MANAGEMENT TEAM HETEROGENEITY ON CORPORATE VALUE IN CHINESE LISTED COMPANIES: THE MODERATING EFFECT OF EXECUTIVE SHAREHOLDING AND OWNERSHIP CONCENTRATION

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Abstract

In the era of innovation and development in China, top management team (TMT) plays an increasingly important role in corporate value. Based on the Upper Echelons Perspective Theory, this paper explores the direct impact of top management team heterogeneity on corporate value, and verifies the moderating role of executive shareholding and ownership concentration. Based on the empirical analysis of 6597 panel data of Chinese listed companies from 2010-2014, this paper finds that the TMT tenure heterogeneity and TMT functional experience heterogeneity are positively correlated with corporate value, while the TMT educational level heterogeneity is negatively correlated with corporate value. Also, there is a very interesting discovery: executive shareholding and ownership concentration did not strengthen the positive impact of TMT heterogeneity on corporate value, but strengthened the negative significant impact of TMT educational level heterogeneity on corporate value. The results of the study provide a very meaningful practical reference for corporate governance in Chinese listed companies.

Keywords: TMT heterogeneity, Executive stockholding, Ownership concentration, Corporate value

Introduction

China's economic development is now entering a new era. People's living standards and the country's economic strength are constantly improving. The real economy is the foundation of the national economy. The healthy development of enterprises strongly supports the real economy. How to enhance corporate value and win the competitiveness of sustainable development is a concern of many enterprises.

Heterogeneity is the diversity and difference in terms of relative homogeneity. For the

development of enterprises, heterogeneity has more strategic significance and value than homogeneity (Hambrick, Cho & Chen, 1996; Carpenter, Geletkanycz & Sanders, 2004). The Upper Echelons Perspective theory holds that inferring cognitive psychology and opinions from demographic characteristics is an effective method for TMT research. Most scholars agree with this view. And classical research dimensions are: age, tenure, functional experience, education level (Hambrick & Mason, 1984; Hambrick, Cho & Chen, 1996; Carpenter, 2002).

Although a large number of companies gradually agree with the heterogeneity of TMT on enterprise development and hope to encourage executives to fully realize the value of TMT heterogeneity through executive stockholding and ownership concentration. But does TMT heterogeneity enhance the company's value? Can executive shareholding and ownership concentration support the positive impact of TMT heterogeneity on corporate value? This paper will provide an important reference.

Research Objective

This study takes the TMT as the research object, and tries to explore the impact of TMT heterogeneity on the corporate value, and the moderating effect of executive shareholding and ownership concentration. And this paper will study the relationship from four dimensions: age, tenure, functional experience and educational lever (Hambrick, Cho & Chen, 1996).

Literature Review and Research Hypothesis

1. Literature review

Based on different perspectives, the relationship between executive heterogeneity and corporate value has not yet reached an unified conclusion. There are two typical theoretical perspectives: information decision-making theory and social unity theory.

Information decision theory insists on the positive impact of information richness and experience diversity on things (Milliken & Martins, 1996; Wiersema & Bantel, 1993). This theory emphasizes the information superiority of heterogeneous, and holds that abundant information and knowledge capabilities can

complement each other (Williams & O'Reilly, 1998) which is conducive to the formation of scientific decision-making. Therefore, it has a positive impact on the development of enterprises.

But in the theory of social unity, people will divide themselves into a similar group according to their own characteristics, and show affinity with the group while excluding it from the outside world. This may lead to conflict because of differences of opinion (Simons, 1995; Zenger & Lawrence, 1989). From the point of view of this theory, the heterogeneity of top management team pays more attention to the contradictions among team members, so it is not conducive to enterprise value.

2. The impact of TMT heterogeneity on corporate value

The impact of TMT age heterogeneity on corporate value. There is much comprehensive information that age can interpret which including experience, energy, the attitude of change and risk-taking. From the perspective of information decision theory, rich age heterogeneity information ensures the kinetic energy of innovation while also avoid a reasonable risk (Wiersema & Bantel, 1993; Richard & Shelor, 2002). So this paper believes TMT age heterogeneity is positively related to corporate value. And make the hypothesis:

Hypothesis 1a. TMT age heterogeneity is positively related to corporate value.

The impact of TMT tenure heterogeneity on corporate value. The TMT heterogeneity of tenure enhance a good consideration to the company's market development environment, which makes it easier to follow long-term

strategies conducive to performance and value enhancement, and at the same time ensures the opportunity to reshape the corporate strategy (Hambrick, 1994). Therefore, this paper argues that the heterogeneity of TMT is positively correlated with corporate value. We propose:

Hypothesis 1b. TMT tenure heterogeneity is positively related to corporate value.

The impact of TMT functional experience heterogeneity on corporate value. The functional experience of executives often affects their perception and understanding of a particular field, which changes the perspective and judgment of the problem. Different functional experience enrich the sources of information asymmetry, the superposition and cognition of technological capabilities. The UE theory also believes that it has a positive impact on corporate development. Hambrick, Cho & Chen (1996) explores the positive effects of functional experience heterogeneity on corporate market share and corporate profits. Therefore, we consider the two to be positively related and propose hypotheses: Hypothesis 1c. TMT functional experience heterogeneity is positively related to corporate value.

The Impact of TMT educational level on corporate value. Generally speaking, a more educated person is more easy to receptive new ideas and more easy adapt to the environment. And social network circles that are aggregated by different academic qualifications serve as the company's social capital resources from the perspective of resource-based view, which help to promote multi-faceted and multi-angle cognition of

strategic decision-making. Therefore, we believe that TMT education level heterogeneity is positively related to corporate value. And make the following hypotheses: Hypothesis 1d. TMT education level heterogeneity is positively related to corporate value.

3. The moderating effect of executive stockholding

According to the optimal contract theory, equity incentive is an effective means to alleviate the agency conflict between shareholders and management, coordinate the relationship between them and take into account the interests of all parties. Executive shareholding greatly reduces the moral choice risk of executives trampling on shareholders' interests caused by the imperfect development of market economy, institutional gap and economic interests (Masson, 1971), such as avoiding occupational risks, improving reputation, implementing cross-subsidies for products, etc. Executives' shareholding can increase TMT strong recognition of the company, and they will pay more attention to the impact of corporate value. Although most studies believe that executive shareholding will bring trench defense effect (Fama & Jensen, 1983) or benefit convergence effect, and will change with the number of executive shareholdings (Morck, Shleifer & Vishny, 1988) due to historical and special economic system reasons, the proportion of executive shareholding often exists in the form of welfare in China. The most typical performance is that the proportion of executive shareholding is very small, which cannot effectively constitute a checks and balances of corporate governance part. Therefore, this paper argues that the existence of

executive shareholding in the form of welfare can play a positive incentive effect:

Hypothesis 2a. Executives shareholding enhances the Impact of TMT age heterogeneity on corporate value.

Hypothesis 2b. Executives shareholding enhances the Impact of TMT tenure heterogeneity on corporate value.

Hypothesis 2c. Executives shareholding enhances the Impact of TMT functional experience heterogeneity on corporate value.

Hypothesis 2d. Executives shareholding enhances the Impact of TMT educational level heterogeneity on corporate value.

4. The moderating effect of ownership concentration

Previous studies have shown the impact of different ownership concentration on corporate value is different: positive, negative, curve and no-impact relationship. Specifically, the different sample size, market environment, management ability and even research methods all of this will get the different results (Burkart et al., 1997). The imperfection of the system and the loopholes of the system are more serious In Chinese current capital market.

The demand for capital policy depends on the development of the enterprise itself. This strengthens the relationship between the holding company and the government, thus invisibly weakening the influence of minority shareholders, making them more passive, and reducing the opportunities for voice and management. Therefore, this paper argues that ownership concentration weakens the impact of TMT heterogeneity on corporate value. And the following hypothesis might be set forth:

Hypothesis 3a. Ownership concentration weakens the influence of TMT age heterogeneity on corporate value.

Hypothesis 3b. Ownership concentration weakens the influence of TMT tenure heterogeneity on corporate value.

Hypothesis 3c. Ownership concentration weakens the influence of TMT functional experience heterogeneity on corporate value.

Hypothesis 3d. Ownership concentration weakens the influence of TMT educational level heterogeneity on corporate value.

5. Conceptual model of research

Accordingly, we propose the following theoretical framework is shown in Figure 1

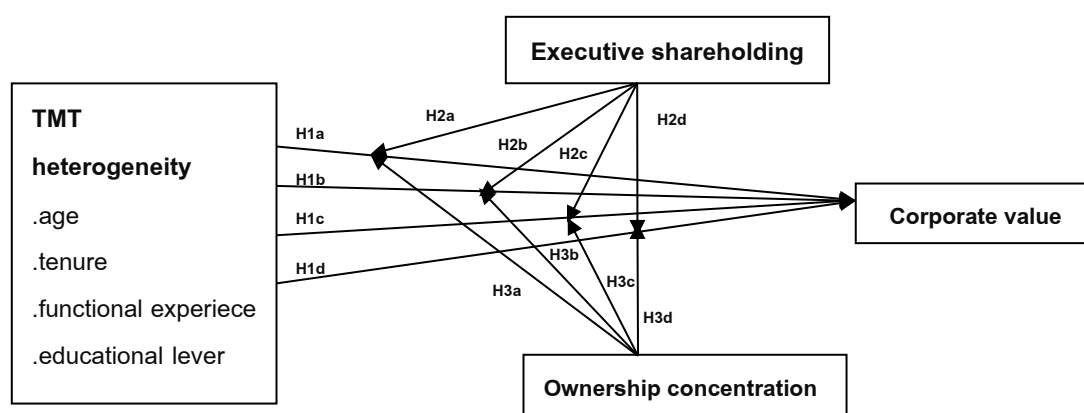


Figure 1 Theoretical framework

Methodology

Literature Research Methodology. By analyzing relevant literature and theories, this paper sorts out the research ideas and grasps the research progress.

Empirical Research Method. According to the theoretical framework, the research variables and test methods are determined. And the data of Listed Companies in authoritative database are collected, the corresponding analysis is carried out by using Stata 15.0 software.

Research Design

1. Data collection

The research data in this paper is mainly from the Wind Economic Database (WIND) and The China Stock Market & Accounting Research (CSMAR) of China. Through the database to obtain the

information of the executives of listed companies in 2010-2014 and the economic and financial data of each index, taking into account the lag of the value of the dependent variable, the selection of the dependent variable data should be delayed (2011-2015). The data of the sample is compared through the consistency of the database to ensure that it is correct. The research sample excludes financial companies, stand companies, and removes companies with inadequate data. Finally, a total of 6,597 samples were obtained.

2. Variable measurement

Dependent variable. Corporate value is the dependent variable of this paper. This paper chooses tobin for the measurement of corporate value, namely (company stock market value + debt book value) / total assets.

Independent variable. The independent variable in this paper is TMT heterogeneity. The heterogeneity of tenure and age are continuous variables, this paper uses the coefficient of variation to measure its heterogeneity. The specific formula is: standard deviation/average. We will use the Herfindahl-Hirschman coefficient to calculation heterogeneity of functional and educational background:

$$H = 1 - \sum_{i=1}^n P_i^2$$

Where H is the degree of heterogeneity, i is the category, a total of n, and P_i is the ratio of the number of each group to the whole..The value range of H is [0,1], the greater the H value, the greater the degree of heterogeneity. Rules on the division of educational background. Reference CSMAR, the text uses assignment method for it: high school and below set the job as "1", college to value "2", undergraduate to "3", the master's assignment is "4," and the doctoral assignment is "5". The others are assigned "6".Rules on the division of functional. Coding: production operation/manufacturing = 1; R&D = 2; finance = 3; marketing and public relations = 4; law = 5; business management = 6; administrative management = 7.

This paper draws on the method of Hmieleski & Ensley (2007) to numerically sum the individual measured heterogeneity indicators to construct a comprehensive index that can measure the heterogeneity of executives. Among them, the higher the value is, the higher the heterogeneity will be.

Moderating variables. Executive Shareholding: executive stock ownership / corporate total stock capital. Ownership concentration: The

level of ownership is based on the shareholding of the company's first to fifth largest shareholders and divided by the total shares.

Control variables. Capital structure, whether the chairman-CEO is the same person, enterprise size, the separation of the two powers, the number of senior management teams, and the equity checks and balances will as control variables.

Empirical test

1 Descriptive statistics and correlation analysis of research variables (The table is omitted here)

It can see that the correlation coefficient between the age heterogeneity and the corporate value is: 0.023, $p < 0.05$, and the correlation coefficient between tenure heterogeneity and the enterprise value is 0.023, $p < 0.05$, The correlation coefficient between education lever heterogeneity and the enterprise value is 0.011, $p < 0.05$. From this point of view, they may have a positive correlated.

2 Hypothesis testing

According to the judgment of the LM Grande test, Wald F test and Hausman test, the fixed effect model FEM selected for regression test (See Annex Table 1: Regression results).

Table 1 Regression results1

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Control variable						
Business scale	.039**	.027*	.030*	.034***	.032*	.032*
	.012	.014	.013	.013	.013	.013
Capital Structure	-.001	-.001	-.002	-.002	-.002	-.002
	.002	.002	.002	.002	.002	.002
Number of executives	-.054**	-.070**	-.013	-.027	-.020	-.005
	.018	.018	.020	.021	.021	.020
CEO	-1.047***	-.965***	-.938***	-.904***	-.885***	-.965***
	.159	.159	.162	.161	.161	.163
Separation of powers	.037***	.037***	.036***	.036***	.035***	.034***
	.010	.010	.010	.010	.010	.010
Equity checks and balances	.107	.124	.139	.142	.146	.114
	.290	.289	.29	.289	.29	.287
Independent variable						
Age heterogeneity		1.114	1.137			
		1.244	1.398			
Tenure heterogeneity		.284***		.266***		
		.059		.064		
Functional experience heterogeneity		.898***			.752**	
		.249			.257	

Table 1 Regression results1 (Cont.)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Educational lever heterogeneity		-.816***				-1.091***
		.229				.244
Moderator						
Executive shareholding			-2.281***	-1.925***	-2.343***	-3.141***
			.642	.358	.607	.568
Interaction term						
Executive shareholding * age heterogeneity			1.205			
			3.529			
Executive shareholding *tenure heterogeneity				-.06		
				.357		
Executive shareholding*functional experience heterogeneity					.852	
					1.214	
Executive shareholding* educational lever heterogeneity						2.132*
						1.084
Constant term	2.969***	2.758***	2.855***	2.869***	2.664***	3.440***
	.302	.363	.344	.293	.316	.308
N	6597	6597	6597	6597	6597	6597
R2	.024	.035	.033	.036	.035	.037
Adj- R2	.023	.034	.031	.034	.034	.036
F	15.13***	14.63***	18.18***	2.76***	19.48***	18.68***

Note: N=6597. * P<0.05. ** p<0.01. ***p<0.001 (2-tailed).

Table 2 Regression results2 (Cont.)

	Model 7	Model 8	Model 9	Model 10
Control variable				
Business scale	.038*	.036**	.035**	.037**
	.013	.013	.013	.013
Capital Structure	-.004	-.004*	-.004*	-.004
	.002	.002	.002	.002
Number of executives	-.032	-.045*	-.039*	-.026
	.018	.018	.018	.018
CEO	-.840***	-.795***	-.795***	-.875***
	.156	.155	.155	.157

Table 2 Regression results2 (Cont.)

	Model 7	Model 8	Model 9	Model 10
Separation of powers	.048***	.049***	.048***	.047***
	.010	.010	.010	.010
Equity checks and balances	.433	.430	.428	.398
	.296	.297	.296	.292
Independent variable				
Age heterogeneity	6.045			
	4.261			
Tenure heterogeneity		.428		
		-1.650		
Functional experience			1.92	
heterogeneity				
			1.143	
Educational lever heterogeneity				-2.990***
				.887
Moderator				
Ownership Concentration	-.059***	-.067***	-.058***	-.087***
	.013	.01	.015	.012
Interaction term				
Ownership concentration* age	-.086			
heterogeneity				
	.067			
Ownership concentration* tenure		-.003		
heterogeneity				
		.361		
Ownership concentration*			-.022	
functional experience heterogeneity				
			.02	
Ownership concentration*				.039*
educational lever heterogeneity				
				.016
Constant term	5.584***	6.15***	5.417***	7.686***
	.765	.526	.805	.631
N	6597	6597	6597	6597
R2	.056	.059	.057	.06
Adj- R2	.054	.057	.056	.059
F	19.21***	21.50***	19.97***	21.00***

Note: N=6597. * P<0.05. ** p<0.01. ***p<0.001 (2-tailed).

Model 2 is the regression of the corporate value. The data of age, tenure, relationship between TMT heterogeneity and functional experience and educational lever

show: 1.114, 0.284, $P < 0.001$, 0.898, $P < 0.001$, 0.816 and $P < 0.001$, respectively. It shows that the TMT tenure and functional experience heterogeneity are positively to the corporate value, while TMT educational lever is negative impact on corporate value.

Model 3-5 corresponds to the moderating effect of executives shareholding on the relationship between age heterogeneity, tenure heterogeneity, function experience heterogeneity and educational lever heterogeneity. In terms of the corresponding heterogeneity dimension and the value of the multiplier of executives shareholding, they are 1.205; -0.060; 0.852; 2.132, $P < 0.05$, respectively. The results show that: Executives shareholding only strengthens the relationship between the TMT educational lever heterogeneity on corporate value, but has no significant moderating action effect on the relationship between the TMT heterogeneity of age, tenure and functional experience.

Model 7-10 is the test of the effect of ownership concentration on the TMT heterogeneity of age, tenure, functional experience and educational lever separately. It shows that the multiplier coefficients of each dimension of TMT heterogeneity and ownership concentration are -0.086, -0.003, -0.002 and 0.039, $P < 0.05$, respectively. which indicates that ownership concentration only strengthens the relationship between TMT educational lever heterogeneity and corporate value, but has no significant moderating effect on other dimensions of TMT heterogeneity.

Conclusion and Discussion

This paper mainly studies the relationship between the heterogeneity of executive team

and corporate value, and discusses the moderating effect of executive shareholding and ownership concentration.

Key findings

Empirical research results show that TMT tenure heterogeneity and TMT functional experience heterogeneity are beneficial to the promotion of corporate value, while the TMT educational lever heterogeneity is negative impact on corporate value. Executive shareholding and ownership concentration only strengthen the negative impact of TMT' educational lever heterogeneity on corporate value. This research has certain theoretical value and practical significance for Chinese enterprises.

First, although most companies are beginning to realize the impact of TMT heterogeneity on corporate value, but not all heterogeneity can have a positive impact on corporate value. For example, age heterogeneity does not show any significant impact on corporate value in this paper.

Second, the TMT functional experience and tenure heterogeneity have played a positive role in corporate value, which is consistent with the UE theory (Hambrick & Mason, 1984) and conforms to the resource-based view that unique and non-replicable resources contribute to the competitiveness of enterprises. The special functional experience of TMT and their unique social resources can form the driving force of the company's development.

Third, research finds the educational lever heterogeneity is negatively correlated with corporate value. This may have something to do with Chinese long-standing concept of

hierarchy. It is difficult to reach a consensus because of differences in values between different levels. Therefore, it is appropriate to use the identity theory to view the academic qualifications of Chinese TMT.

Importantly, empirical studies show that executive shareholding and ownership concentration do not play a good role in promoting corporate value by TMT tenure heterogeneity and TMT educational lever heterogeneity, on the contrary, they strength the negative impact of TMT heterogeneity on corporate value. Therefore, executive shareholding and ownership concentration are issues worthy of rethinking for most enterprises, and its structure is also necessary for further study.

Theoretical contribution and management implications

This study will help us to understand the relationship between TMT heterogeneity and corporate value. The results support the UE theory and further expands the sample size of different economic systems. The empirical results have important guiding significance for enterprise decision-making. For firms, the

promotion of corporate value needs to pay attention to the positive impact of TMT tenure heterogeneity and functional experience heterogeneity on corporate value; Meanwhile, effectively avoid the negative impact of TMT educational lever heterogeneity on corporate value. Further, corporate policymakers should fully assess whether executive shareholding and ownership concentration can fully mobilize the role of heterogeneity of executive team in enterprise development and avoid the "non-economic" nature of high-cost decision-making.

Limitations and prospects.

Our study also has some limitations. First, the dimension of executive heterogeneity selected in this study is limited. It only considers its four aspects of age, tenure, functional experience, and educational lever. In fact, in China, the role of relational capital is significant and worthy of further study; Second, Given the close ties between the Chinese government and enterprises, it is also worthwhile to fully consider the regulatory role of the institutional environment

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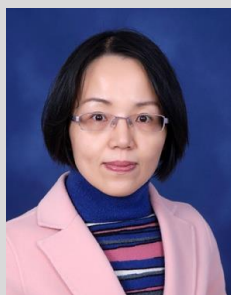


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